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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/791,013	03/02/2004	Anne Flisher	GT/3-21923/A/AC 533/DIV	1308

7590 02/16/2005

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EXAMINER
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BERMAN, SUSAN W

ART UNIT	PAPER NUMBER
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1711

DATE MAILED: 02/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/791,013

Applicant(s)

FLISHER ET AL.

Examiner

Susan W Berman

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 12-16 and 20-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 12-16 and 20-28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☒ Certified copies of the priority documents have been received in Application No. 09/890,129.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 3/04, 6/04.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

***Specification***

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed. The title "Polymerization Process" does not indicate how the instantly claimed process differs from all known polymerization processes.

The disclosure is objected to because of the following informalities: There are no headings, i.e. Background of the Invention, Summary of the Invention, Brief Description of Drawings, etc..

Appropriate correction is required.

***Response to Amendment***

The amendment filed 01-14-2005 is objected to under 35 U.S.C. 132 because it introduces new matter into the disclosure. 35 U.S.C. 132 states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: method "wherein the water soluble or water swellable polymer is not a gel". Applicant points to page 1, paragraph 3, for support in the specification for this amendment. However, this paragraph is a discussion of the background of the invention and what is known in the prior art. A similar disclosure is found on page 7, paragraph 2, however, this disclosure does not provide support for the amendment from the following reasons. This paragraph discusses solution polymerization, reverse phase polymerization and emulsion polymerization as alternative methods for polymerizing an aqueous solution of water soluble monomer. There is no mention of polymeric beads or polymeric dispersions or polymerized emulsions that do not comprise gels as the polymerized material. Cywar et al (6,262,141) teach that polymer gels are produced by emulsion or suspension polymerization as well as by solution polymerization (column 5, lines 51-62). Ahr (5,800,418) also teaches that absorbent gelling materials can be prepared by inverse emulsion or inverse suspension polymerization as well as by solution polymerization (column 5, lines 17-30).

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Applicant is required to cancel the new matter in the reply to this Office Action.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 12, 13, 20-24 and 28 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for a method wherein the ultra-violet initiator is defined as a hydroxyalkylphenone ultra-violet initiator, does not reasonably provide enablement for any other ultra-violet initiators. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to practice the invention commensurate in scope with these claims. Hydroxyalkyl-phenones of formula (I) are the only ultra-violet initiators disclosed by applicant as having the required properties with respect to activation at the disclosed light intensities in order to reduce the residual monomer content in the disclosed polymerization method.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 12-16 and 20-28 are rejected under 35 U.S.C. 102(e) as being anticipated by Cywar et al (6,262,141). Cywar et al teach polymerizing vinyl monomers, including acrylamide, in aqueous solution

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comprising one or more photoinitiators present during the initial polymerization occurring by action of redox initiators or thermal decomposition of an azo compound (column 4, lines 46-63). The preferred ultraviolet photoinitiator is an  $\alpha$ -hydroxyacetophenone such as Irgacure 2959 and Darocure 1173 (column 5, lines 23-35). Cywar et al teach that a portion of photoinitiator can be added to produced gel particles and may be absorbed into the particles to an extent sufficient to help promote further polymerization and reduction in the residual monomer content (column 5, lines 43-50, and column 6, line 66, to column 7, line 5). See column 3, line 59, to column 4, line 8, the "Gelled Polymer Synthesis I" and "Gelled Polymer Synthesis II" in column 8 and Example 1. with respect to claim 22, Cywar et al teach adding photoinitiator to comminuted gel particles. This method would be expected to coat the surface of the polymer, as required in claim 22, in the absence of evidence to the contrary.

Claims 12-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Zhang et al (5,889,073). Zhang et al teach a process for producing a material having a hydrophilic surface by irradiating a photopolymerizable monomer in the presence of a photoinitiator, removing unreacted reactants followed by post curing with ultraviolet rays and optional heat treatment to completely remove the unreacted monomers and residual solvent. The disclosed photoinitiators include 2-hydroxy-2-methyl-1-phenylpropanone and hydroxycyclohexyl phenyl ketone, which are used in the examples. See column 2, line 41, to column 3, line 36, column 5, line 52, to column 6, line 3, column 13, lines 6-14,

### ***Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

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A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 12-16 and 20-28 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-20 of copending Application No. 10/468191 in view of Yada et al (4,762,862). Although the conflicting claims are not identical, they are not patentably distinct from each other for the following reasons. The instantly claimed process encompasses the process steps set forth in the claims of SN 10/468,191 wherein the product of step b is subjected to irradiation in step c, resulting in reducing the residual monomer content in the water soluble or water swellable polymer. Yada et al disclose cationic acrylic polymers obtained by adding an azoguanyl photoinitiator and another photoinitiator to an aqueous monomer solution and irradiating in two stages with different light intensities. Yada et al teach that excess unreacted monomers present in the polymer gel can be decreased to a satisfactory low level (column 7, lines 26-38). See column 2, line 45, to column 3, line 25, column 5, line 40, to column 6, line 6, column 6, lines 16-27, and the Examples.

Yada et al teach that residual monomer content can be reduced in a process for preparing a water-soluble polymer by employing two different UV initiators and light of different intensities in the polymerization process. It would have been obvious to one skilled in the art at the time of the invention that the process steps set forth in the claims of SN '191 would result in reducing the residual monomer content, as taught by Yada et al in analogous art. It is noted that SN '191 discloses that the claimed process is for reducing the residual monomer content in the water soluble or water swellable polymer. The instant claims are not limited to specific process steps other than irradiating the polymer in the presence of an ultraviolet initiator.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

### *Conclusion*

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Kohler et al (5,045,573) disclose the advantages of photoinitiators such as Irgacure 2959 for polymerizing ethylenically unsaturated monomers in aqueous systems.

Herz et al (4,547,394) disclose increased reactivity of photoinitiator such as Irgacure 2959 compared with Darocure 1173 for radiation curing in aqueous systems.

Kanlun et al (5,185,385) teach a high conversion of monomer by solution polymerization that produces a gel and discloses yields over 99% (column 4, lines 38-44). The process disclosed would be expected to produce polymers in which the amount of residual monomer is very low.

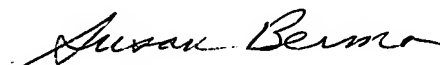
Perrault (5,800,685) discloses free radical polymerization in aqueous solution by ultraviolet curing with an initiator in which the amount of residual monomer is preferred to be less than 3%.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Susan W Berman whose telephone number is 571 272 1067. The examiner can normally be reached on M-F 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on 571 272 1078. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Susan W Berman  
Primary Examiner  
Art Unit 1711

SB  
2/11/05